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EXAMINER
EINSMANN, JULIET CAROLINE

ART UNIT	PAPER NUMBER
1634	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/403,690	PFEFFER, KLAUS	
	Examiner	Art Unit	
	Juliet C Einsmann	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/1/02 and 1/6/03* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-24 and 26-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-24 and 26-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11/02* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 11/1/02 and 1/6/03 has been entered. Claim 25 has been cancelled. Claims 21, 22, 24, 26, 29, 30, 31, 33, 34, 36, 38, and 40 have been amended. Claims 21-24 and 26-40 are pending and are rejected herein. Applicant's amendments and arguments have been thoroughly reviewed, but are not persuasive for the reasons that follow. Any rejections not reiterated in this action have been withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. THIS ACTION IS FINAL.

Claim Rejections - 35 USC § 112, 2nd Paragraph

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 21-24, 26-29, 36-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 is indefinite because it recites a step of isolating nucleic acid from a sample, but then the claim requires adding a set of oligonucleotide primers to the sample. It is unclear how,

and why, if the nucleic acids have been removed from the sample, one would add oligonucleotides to the sample. Amending the claim to recite "adding a set of oligonucleotide primer pairs to the isolated nucleic acid" would obviate this rejection. All of the claims that depend from claim 21 are indefinite for this reason as well.

Claim 21 is further indefinite over the recitation "...at least five oligonucleotide primer pairs, wherein at least one primer pair is capable of specifically amplifying a DNA sequence to produce an amplified product of a virulence factor gene characteristic for each one of..." because it is not clear if the claim is requiring that one of the primer pairs must be able to amplify all of the recited sequences OR if there must be one primer pair in the set that is able to amplify a virulence factor/toxin gene characteristic for each of the five types of *E. coli*. For the purposes of examination with regard to the prior art, the later interpretation was used. All of the claims that depend from claim 21 are indefinite for this reason as well. Claim 36 is indefinite for the use of similar language to describe the primer pairs.

In claim 24, the phrase "said PCR amplification process" lacks proper antecedent basis because neither claim 24 nor claim 21 previously recite a PCR amplification process.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 21, 22, 29, 30, 31, 36, 37, 38, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lett *et al.* (Food Testing and Analysis, December 1995/January 1996, 34-38) in view of Schmidt *et al.* (Journal of Clinical Microbiology (1995) 33(3): 701-705), Louie *et al.* (Epidemiol. Infect. (1994), 112:449-461) and Levine *et al.* (American Journal of Epidemiology, Nov. 15, 1993, 138(10): 849-869).

Lett *et al.* teach a method for detection and differentiation of pathogenic enterobacteria in a sample, said method comprising:

isolating nucleic acid from a sample, wherein the sample is ground beef (p. 35);

adding a set of oligonucleotide primer pairs to said nucleic acid, wherein said set of oligonucleotide primer pairs comprises three primer pairs, wherein the three primer pairs comprises a primer pair capable of specifically detecting the heat labile toxin of enterotoxigenic *E. coli* (ETEC), a primer pair capable of specifically detecting the invasive gene (also referred to as the inv plasmid) of enteroinvasive *E. coli* (EIEC), and a primer pair capable of specifically detecting the verotoxin II gene (also known as the shiga-like toxin) or enterohemorrhagic *E. coli* (EHEC) (p. 35);

subjecting said nucleic acid and said set of primers to an amplification process (p. 35);

and detecting the presence of at least one amplified product, wherein the presence of at least one amplified product indicates the presence of at least one pathogenic enterobacteria strain in said sample (p. 35).

Thus, Lett *et al.* teach a set of oligonucleotide primer pairs useful for PCR amplification of DNA pathogenic enterobacteria which comprises three primer pairs, wherein the three primer pairs comprises a primer pair capable of specifically detecting the heat labile toxin of

enterotoxigenic *E. coli*, a primer pair capable of specifically detecting the invasive gene of enteroinvasive *E. coli*, and a primer pair capable of specifically detecting the verotoxin II gene (also known as the shiga-like toxin) or enterohemorrhagic *E. coli* (p. 35).

Lett *et al.* do not teach a method wherein primer pairs that detect enteroaggregative *E. coli* (EAggEC) or enteropathogenic *E. coli* (EPEC) are used in an amplification process. Lett *et al.* do not teach a set of five pairs of amplification primers or a set of five labeled oligonucleotide probes.

Schmidt *et al.* teach a method for the detection of enteroaggregative *E. coli* in a sample which utilizes amplification of a 630 base pair region of the pCVD432 plasmid, also known as the enteroaggregative *E. coli* probe (p. 701). Schmidt *et al.* teach that their findings reveal that the PCR assay was more rapid, simple, and highly sensitive, and recommended the method as a screening method for EAggEC in a sample (see, for example, ABSTRACT). Schmidt *et al.* further teach an oligonucleotide probe which binds to the EAggEC amplification product (p. 702).

Louie *et al.* teach PCR assays and probes that allow the specific identification of EPEC which contain the *eae* gene (Table 2; p. 452-453). Louie *et al.* teach that their methods "will be useful methods for subclassification of EPEC and VTEC (p. 459)."

Levine *et al.* teach a method for the detection and differentiation of pathogenic enterobacteria in a sample which comprises the detection and differentiation of enterotoxigenic *E. coli* (ETEC), enteroinvasive *E. coli* (EIEC), enteropathogenic *E. coli* (EPEC), enterohemorrhagic *E. coli* (EHEC), and enteroaggregative *E. coli* (EaggEC) in a sample, wherein the sample is human fecal matter. Levine *et al.* specifically teach the use of oligonucleotide

probes to the heat labile (LT) and heat stable (ST) genes of ETEC, the invasiveness plasmid (inv) of EIEC, the EPEC Adherence Factor (EAF) plasmid of EPEC, the shiga-like toxin genes sltI and sltII of EHEC, and the EaggEC plasmid (pCVD432) of EaggEC (see p. 854). Thus, Levine *et al.* exemplify that a method for detecting all five types of *E. coli* would be of benefit to a one of ordinary skill in the art.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have modified the methods Lett *et al.* so as to have also included steps of amplifying two additional types of *E. coli*, namely the EAggEC and EPEC as taught by Schmidt *et al.* and Louie *et al.* The ordinary practitioner would have been motivated to have included amplification of these additional sequences in the methods taught by Lett *et al.* in order to have detected a wider variety of types of pathogenic bacteria, especially since Levine *et al.* exemplify that the screening for all five of these types of bacteria in a sample is desirable. Further, the ordinary practitioner would have been motivated by the success of Schmidt *et al.* and Louie *et al.* in amplifying specific virulence factors from the EAggEC and the EPEC. It would have been obvious to use these amplification methods to detect *E. coli* in human and food samples such as beef since these are both types of samples known to harbor pathogenic *E. coli*.

With regard to the specific PCR parameters recited in claim 29, these are considered to be parameters obtained by routine optimization of an assay. As noted in *In re Aller*, 105 USPQ 233 at 235, "More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." Routine optimization is not considered inventive and no evidence has been presented that the PCR parameters claimed performed are other than routine, that the methods resulting from the

optimization have any unexpected properties, or that the results should be considered unexpected in any way as compared to the closest prior art. As such, in the absence of a secondary consideration, such as unexpected results, these are considered obvious over the art of record.

The practice of such a PCR method as taught by Lett *et al.*, Schmidt *et al.*, Louie *et al.*, and Levine *et al.*, would have necessarily let to the production of a set of primer pairs wherein the set comprises at least five primer pairs, wherein each primer pair specifically amplifies a DNA sequence of a virulence factor or toxin gene from each of the five detected subgroups of *E. coli*. Thus, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have modified the set of primers provided by Lett *et al.* so as to have also primers specific two additional types of *E. coli*, namely the EAggEC and EPEC as taught by Schmidt *et al.* and Louie *et al.*

Thus, in light of the teachings of the prior art the instantly rejected invention is *prima facie* obvious.

5. Claims 24, 26, 28, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* as applied to claims 21, 22, 29, 30, 31, 36, 37, 38, 39, and 40 above and further in view of in view of Bassler *et al.* (Applied and Environmental Microbiology, October 1995, Vol. 61, No. 10, p. 3724-3728).

The teachings of are applied to this rejection as discussed in the rejection of claims 21, 22, 29, 30, 31, 36, 37, 38, 39, and 40.

Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* do not teach methods wherein a polymerase having 5'-3' exonuclease activity is used for the amplification of DNA

and a probe labeled at both ends is used to detect amplified samples, nor do they teach a set of labeled probes wherein the probes are labeled at both ends.

Bassler *et al.* teach a PCR-based assay that uses the hydrolysis of an internal fluorogenic probe to monitor the amplification of the target (ABSTRACT). The method taught by Bassler *et al.* utilizes a polymerase having 5'-3; exonuclease activity and a probe labeled at the 5' end with the fluorescent dye 6-carboxyfluorescein (6-FAM) and also labeled at the 3' end with the fluorescent quencher dye 6-carboxytetramethyl-rhodamine(TAMARA) (Fig. 1). The labeled probe hybridizes with the target DNA and is included in the amplification process.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have combined the methods taught by Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* with those taught by Bassler *et al.* The ordinary practitioner would have been motivated to modify the teachings of Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* so as to include the use an assay such as the one taught by Bassler *et al.* for the detection of *E. coli* since Bassler *et al.* that "The TaqMan system is not only fast and easy to perform but also unique in its ability to quantify the amount of template. This method is robust and can probably be applied to the detection of other food and environmental pathogens, easily substituting for the current detection scheme in standard PCR assays (p. 3728)." The practice of such a method would have also resulted in the production of a set of probes which includes one probe for each sequence to be amplified using the methods taught by Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* Following the guidance provided by Bassler *et al.* these selected probes would be labeled at the 5' end with a fluorescent reporter dye and at the 3' end with a fluorescent quencher dye for use in the resultant methods.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* in view of Bassler *et al.* as applied to claims 24, 26, 28, 33, and 34 above, and further in view of Yamamoto *et al.* (Journal of Bacteriology, Aug. 1983, Vol. 155, No. 2, p. 728-733).

The teachings of Levine *et al.* in view of Lang *et al.* in view of Bassler *et al.* are applied to claim 27 as they are applied to claims 24, 26, 28, 33, and 34 above. Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* in view of Bassler *et al.* do not teach methods in which the at least one probe used to detect the LT gene is SEQ ID NO: 19. However, it is further noted that Bassler *et al.* provide specific and detailed guidance for the selection of probes to be used within the TaqMan methods (p. 3725).

Yamamoto *et al.* teach the nucleotide sequence of heat labile toxin of *E. coli* pathogenic for humans (Figure 2). Instant SEQ ID NO: 19 consists of nucleotides 78-104 of the sequence taught by Yamamoto *et al.* on page 730. Notable, this probe is within the region amplified by the primers taught by Lett *et al.*

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have utilized a probes selected from within the region of the heat labile toxin amplified by the methods taught by Lett *et al.*, from the sequence taught by Yamamoto *et al.* for use in the detection methods taught by Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* in view of Bassler *et al.* The ordinary practitioner would have been motivated to select any such probe from within the region amplified by Lett *et al.* using the clear and specific guidance taught by Bassler *et al.* in order to have provided a probe for use in the

TaqMan methods taught by Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* in view of Bassler *et al.*

It is noted that claim 27 requires only a single probe be used in the method of detection, and thus, this rejection has been set forth for only a single probe. Other rejections of a similar nature would have been duplicative.

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* in view of Bassler *et al.* as applied to claims 24, 26, 28, 33, and 34 above, and further in view of all of the following: Yamamoto *et al.*, Lampel *et al.* (US 5041372), Kaper (1995, GenBank Accession Z11541) and Paton *et al.* (GenBank L11079).

The teachings of Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* and further in view of Bassler *et al.* are applied to this claim as discussed above in the rejection of claims 24, 26, 28, 33, and 34. These combined references do not provide probes consisting of the specific sequences recited in claim 35. However, it is further noted that Bassler *et al.* provide specific and detailed guidance for the selection of probes to be used within the TaqMan methods (p. 3725).

However, the full length sequences of all of genes from which the probes used in the methods of Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* further in view of Bassler *et al.* were derived were known in the prior art at the time the invention was made.

Yamamoto *et al.* teach the nucleotide sequence of heat labile toxin of *E. coli* pathogenic for humans (Figure 2). Instant SEQ ID NO: 19 consists of nucleotides 78-104 of the sequence

taught by Yamamoto *et al.* on page 730. Notable, this probe is within the region amplified by the primers taught by Lett *et al.*

Instant SEQ ID NO: 22 consists of the complement of nucleotides 639-668 of the pCVD432 plasmid sequence taught in figure 1 of Schmidt *et al.*

Instant SEQ ID NO: 23 consists of the complement of nucleotides 177-202 of the probe taught by Lampel *et al.* (Col. 13-14).

Instant SEQ ID NO: 25 consists the complement of nucleotides 908-935 of the sequence for the eae gene disclosed in GenBank Z11541.

Instant SEQ ID NO: 26 consists of the complement of nucleotides 1338-1367 of the sequence taught by Paton *et al.*

Thus, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have selected probes consisting of instant SEQ ID NO: 19, SEQ ID NO: 22, SEQ ID NO: 23, SEQ ID NO: 25 and SEQ ID NO: 26 for use in the methods taught by Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* in view of Bassler *et al.* The ordinary practitioner would have been motivated to select these probes, or any other probes from within the known target sequences, in order to provide probes for use in the detection of pathogenic *E. coli*.

Response to Remarks

The claims have been extensively amended, and new grounds of rejection are set forth to address the amended claims. However, the remarks are address insofar as they might apply to the amended claims.

The remarks on pages 12-17 all focus primarily on the fact that the amended present methods or products which both require the presence of at least five primer pairs, and the previous rejections do not meet this limitation. These concerns have been addressed in the new grounds of rejection set forth herein. Namely, the combination of Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* provide five primer pairs for the detection of different types of pathogenic *E. coli*.

On page 18 Applicant remarks that the cited references do not teach a method for detection and differentiation of 5 subgroups using PCR alone. Although the rejection which applicant is discussing has been withdrawn, this point is addressed as it might apply to the current rejections. In particular, it is noted that applicant's claims do not require that methods be detected by PCR alone. First, the independent method claim set forth herein does not even require PCR, but instead an "amplification method." Second, the methods are drawn using "comprising" language, and thus could include steps other than those listed herein. Further, applicant's dependent claims clearly require detection of amplification products using oligonucleotide probes, and thus it is clear from the claims themselves that applicant's methods encompass methods wherein additional steps are undertaken to detect the amplification products. Thus, applicant's remarks at page 18 of the response are not persuasive as they would apply to the instant rejection.

Furthermore, applicant argues that one of skill in the art would have no expectation of success when combining the elements (p. 18-20 of response). Again, although the rejection which applicant is discussing has been withdrawn, this point is addressed as it might apply to the current rejections. Applicant appears to be arguing that there would be no expectation of success

when attempting a multiplex amplification of eight primer pairs. This is not persuasive for a number of reasons. First, neither the claims nor the combination of references require a multiplex amplification reaction with eight primer pairs. In fact, it is not even clear that applicant's specification contemplates such a methodology, since applicant's specification clearly discusses running the amplification reactions simultaneously in a 96 well plate. Furthermore, each of the references provided demonstrates detection of one or more of the five different pathogenic types using methodologies that employ single primer pairs. Absolute predictability is not required in order to establish an expectation of success. The MPEP states, "Obviousness does not require absolute predictability, however, at least some degree of predictability is required. Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness (2143.02)." Here, no evidence has been shown that the amplification reactions suggested by the combination of the teachings of Lett *et al.* in view of Schmidt *et al.*, Louie *et al.* and Levine *et al.* would have no expectation of success.

Conclusion

8. Claims 23 and 32 are free of the prior art. These claims require a primer pair that hybridizes to the inv-plasmid of EIEC, and in particular require that the primer pair consists of instant SEQ ID NO: 9 and instant SEQ ID NO: 10. This primer pair is free of the prior art because the prior art does not teach or suggest a primer SEQ ID NO: 10 that would be useful for the specific detection of the inv-plasmid of enteroinvasive *E. coli*. The prior art teaches that SEQ ID NO: 10 is found within the Shigella flexneri virulence plasmid (see sequence search result appended below) but does not teach or suggest that this sequence would be useful as a primer for

the specific detection of EIEC. Thus, for at least this reason, claims 23 and 32 are free of the prior art.

9. Claims 23 and 32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliet C. Einsmann whose telephone number is (703) 306-5824. The examiner can normally be reached on Monday through Thursday, 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 and (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Juliet C Einsmann
Examiner
Art Unit 1634

March 22, 2003

GARY BENZION, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600